

(19) World Intellectual Property
Organization
International Bureau



(43) International Publication Date
23 June 2005 (23.06.2005)

PCT

(10) International Publication Number
WO 2005/056747 A2

- (51) International Patent Classification⁷: C12M (81) Designated States (*unless otherwise indicated, for every kind of national protection available*): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.
- (21) International Application Number: PCT/IL2004/001118
- (22) International Filing Date: 9 December 2004 (09.12.2004)
- (25) Filing Language: English
- (26) Publication Language: English
- (30) Priority Data: 60/527,716 9 December 2003 (09.12.2003) US
- (71) Applicant (*for all designated States except US*): BEN-GURION UNIVERSITY OF THE NEGEV RESEARCH AND DEVELOPMENT AUTHORITY [IL/IL]; P.O. Box 653, 84105 Beer-Sheva (IL).
- (72) Inventors; and
- (75) Inventors/Applicants (*for US only*): COHEN, Smadar [IL/IL]; 6 Bentoiz Street, Ramot, 84836 Beer-Sheva (IL). DVIR, Tal [IL/IL]; 3 Devora Baron Street, 75224 Rishon LeZion (IL). SHACHAR, Michal [IL/IL]; 6/8 Sderot HaArim HaTeumot, 84714 Beer-Sheva (IL).
- (74) Agents: LUZZATTO, Kfir et al.; P.O. Box 5352, 84152 Beer Sheva (IL).
- (84) Designated States (*unless otherwise indicated, for every kind of regional protection available*): ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).
- Published:
— *without international search report and to be republished upon receipt of that report*
- For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.*

(54) Title: PULSE-MEDIUM PERFUSION BIOREACTOR WITH IMPROVED MASS TRANSPORT FOR MULTIPLE 3-D CELL CONSTRUCTS

(57) Abstract: Disclosed is a novel net member for supporting one or more cell constructs in the culture chamber of a bioreactor, which comprises an array of impermeable pyramidal elements protruding from the face thereof, wherein each of the corners of the base of each of said impermeable pyramidal elements comprises a circular opening. This net member provides for uniform and unobstructed flow of culture medium through 3D cell constructs in culture. Also disclosed are a bioreactor and bioreactor system incorporating said net member. The bioreactor and bioreactor system may be used in the bioproduction of therapeutic proteins and stem cell expansion.

WO 2005/056747 A2